(a) a first nucleic acid molecule having at least 40 contiguous nucleotides identical in sequence to at least 40 contiguous nucleotide region of SEQ ID NO:54, SEQ ID NO:56, SEQ ID NO:57, SEQ ID NO:59, SEQ ID NO:60, SEQ ID NO:62, SEQ ID NO:63, SEQ ID NO:64,SEQ ID NO:65, SEQ ID NO:67, SEQ ID NO:68 or SEQ ID NO:70; and

(b) a second nucleic acid molecule comprising a first nucleic acid sequence that is at least 80% identical in sequence to SEQ ID NO:54, SEQ ID NO:56, SEQ ID NO:57, SEQ ID NO:59, SEQ ID NO:60, SEQ ID NO:62, SEQ ID NO:63, SEQ ID NO:64,SEQ ID NO:65, SEQ ID NO:67, SEQ ID NO:68 and SEQ ID NO:70, and a fragment thereof, wherein said fragment is at least 50 nucleotides in length, and wherein said percent identity can be determined by a DNAsis™ computer program with a gap penalty set at 5, the number of top diagonals set at 5, a fixed gap penalty set at 10, a k-tuple set at 2, a window size set at 10 and a floating gap penalty set at 10.

Claim 25 (Reiterated) The nucleic acid molecule of Claim 24, wherein said isolated nucleic acid molecule encodes a protein comprising an amino acid sequence selected from the group consisting of SEQ ID NO:55, SEQ ID NO:58, SEQ ID NO:61, SEQ ID NO:66 and SEQ ID NO:69.

Claim 28 (Reiterated) An isolated nucleic acid molecule selected from the group consisting of:

(a) a first nucleic acid molecule comprising a first nucleic acid sequence encoding a first protein selected from the group consisting of:

(i) a second protein comprising an amino acid sequence that is at least 70 percent identical in sequence to SEQ ID NO:55, SEQ ID NO:58, SEQ ID NO:61, SEQ ID NO:66, and SEQ ID NO:69, wherein percent identity is determined by a DNAsis™ computer program with a gap penalty set at 5, the number of top diagonals set at 5, a fixed gap penalty set at 10, a k-tuple set at 2, a window size set at 10 and a floating gap penalty set at 10; and

(ii) a second protein comprising a fragment of at least 40 contiguous amino acids identical in sequence to an at least 40 contiguous amino acids of the first protein;

(b) a second nucleic acid molecule comprising a second nucleic acid sequence encoding a protein that comprises an at least 30 contiguous amino acid region identical in sequence to an at least 30 contiguous amino acid region of SEQ ID NO:55, SEQ ID NO:58, SEQ ID NO:61, SEQ ID NO:66, and SEQ ID NO:69;

(c) a third isolated nucleic acid molecule complementary to the first or second nucleic acid molecule.

Claim 29 (Reiterated) The nucleic acid molecule of Claim 28, wherein said protein binds to canine IL-13, as measured by its ability to inhibit IL-13-stimulated TF-1 cell proliferation.

Claim 30 (Once amended) The nucleic acid molecule of Claim 28, wherein said isolated nucleic acid molecule comprises a nucleic acid sequence that encodes an IL-13Rα2 protein of at least 40 amino acids in length, wherein said nucleic acid sequence comprises an at least 120 contiguous nucleotide sequence identical in sequence to an at least 120 contiguous nucleotide region of SEQ ID NO:54, SEQ ID NO:56, SEQ ID NO:57, SEQ ID NO:59, SEQ ID NO:60, SEQ ID NO:62, SEQ ID NO:63, SEQ ID NO:64,SEQ ID NO:65, SEQ ID NO:67, SEQ ID NO:68 or SEQ ID NO:70, wherein said isolated nucleic acid molecule does not hybridize under conditions comprising hybridization at 65°C in 0.1 X SSC followed by washing at 65°C in 0.1 X SSC with the third nucleic acid sequence selected from the group consisting of SEQ ID NO:95, SEQ ID NO:96, SEQ ID NO:97 and SEQ ID NO:98.

a'

Claim 34 (Reiterated) An isolated protein selected from the group consisting of:

(a) a first protein comprising a first amino acid sequence of at least 30 amino acids in length, wherein said first amino acid sequence has at least 30 contiguous amino acid region identical in sequence to at least 30 contiguous amino acid region of SEQ ID NO:55, SEQ ID NO:58, SEQ ID NO:61, SEQ ID NO:66, or SEQ ID NO:69; and

(b) a second protein comprising a third amino acid sequence that is at least 70 percent identical in sequence to SEQ ID NO:55, SEQ ID NO:58, SEQ ID NO:61, SEQ ID NO:66, or SEQ ID NO:69, and a fragment thereof, wherein said fragment is at least 40 amino acids in length, wherein percent identity is determined by a DNAsis™ computer program.

Claim 35 (Reiterated) The isolated protein of Claim 34, wherein said first protein is encoded by a nucleic acid molecule comprising an at least 90 contiguous nucleotide region identical in sequence to an at least 90 contiguous nucleotide region of SEQ ID NO:54, SEQ ID NO:57, SEQ ID NO:60, SEQ ID NO:63, SEQ ID NO:65 or SEQ ID NO:68.

a2

Claim 36 (Once amended) A chimeric nucleic acid molecule encoding a fusion protein comprising:

(a) a nucleic acid molecule encoding a carrier protein domain; and

(b) a nucleic acid molecule encoding a canine IL-13Rα2 protein domain.

Claim 37 (Reiterated) The chimeric nucleic acid molecule of Claim 36, wherein said fusion protein further comprises a linker sequence.

Claim 38 (Reiterated) The chimeric nucleic acid molecule of Claim 36, wherein said carrier protein domain is an immunoglobulin Fc region.

Claim 39 (Reiterated) The chimeric nucleic acid molecule of Claim 36, wherein said carrier protein domain is a canine immunoglobulin Fc region.

Claim 40 (Reiterated) The chimeric nucleic acid molecule of Claim 36, wherein said carrier protein domain is a canine immunoglobulin IgG Fc region.

Claim 43 (Reiterated) The chimeric nucleic acid molecule of Claim 36, wherein said chimeric nucleic acid molecule comprises a nucleic acid sequence selected from the group consisting of SEQ ID NO:71, SEQ ID NO:74, SEQ ID NO:77, SEQ ID NO:80 and SEQ ID NO:82.

a3

Claim 44 (Once amended) The chimeric nucleic acid molecule of Claim 36, wherein said nucleic acid molecule encoding said IL-13Rα2 protein domain comprises a nucleic acid sequence selected from the group consisting of SEQ ID NO:54, SEQ ID NO:57, SEQ ID NO:60, SEQ ID NO:63, SEQ ID NO:65, and SEQ ID NO:68.

Claim 45 (Once amended) The chimeric nucleic acid molecule of Claim 36, wherein said chimeric nucleic acid molecule comprises said nucleic acid molecule encoding said carrier protein domain on the 5' end of said chimeric nucleic acid molecule and said nucleic acid molecule encoding said IL-13Rα2 protein domain on the 3' end of said chimeric nucleic acid molecule.

a3 cont

Claim 46 (Once amended) The chimeric nucleic acid molecule of Claim 36, wherein said chimeric nucleic acid molecule comprises said nucleic acid molecule encoding said IL-13α2 protein domain on the 5' end of said chimeric nucleic acid molecule and said nucleic acid molecule encoding said carrier protein domain on the 3' end of said chimeric nucleic acid molecule.

Claim 47 (Once amended) A fusion protein comprising a carrier protein domain and a canine IL-13Rα2 protein domain.

Claim 49 (Reiterated) The fusion protein of Claim 47, wherein said fusion protein comprises an amino acid sequence selected from the group consisting of SEQ ID NO:72, SEQ ID NO:75, SEQ ID NO:78, and SEQ ID NO:81.

Claim 50 (Once amended) The fusion protein of Claim 47, wherein said IL-13Rα protein domain comprises an amino acid sequence selected from the group consisting of SEQ ID NO:55, SEQ ID NO:58, SEQ ID NO:61, SEQ ID NO:66, and SEQ ID NO:69.

a4

Claim 51 (Once amended) A therapeutic composition that, when administered to a canid, regulates an immune response in said canid, said therapeutic composition comprising a nucleic acid molecule encoding a therapeutic compound selected from the group consisting of:

(a) a protein selected from the group consisting of a canine IL-13Rα2 and the fusion protein of claim 47;

(b) a mimetope of said protein; and

(c) a multimeric form of said protein.